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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
QUASH, ANTHONY G	

ART UNIT	PAPER NUMBER
2881	

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/796,717	THAKUR, ROHAN	
	Examiner	Art Unit	
	Anthony Quash	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *3/10/05 (amendment)*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11,12 and 20-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11,12 and 20-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 10,13-19 have been canceled by applicant's amendment, filed 3/10/05.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tao [JP 411025903] in view of Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm. As per claim 1, Tao [JP 411025903] teaches a skimmer in a mass spectrometer comprising a body having an orifice through which ions can pass, wherein at least a portion of the body comprises metal. See Tao [JP 411025903] abstract, and figs. 1-2. However Tao [JP 411025903] does not explicitly state the metal being titanium. Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, teaches that it was known to use titanium as electrodes and in reaction vessels (page 3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made have the metal be titanium due to its' high resistance to corrosion, and heat, there by reducing the deposition of compounds.

As per claim 2, Tao [JP 411025903] in view of Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, teach all aspects of the

claim except for explicitly stating that the entire body comprise titanium metal. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the entire body of the skimmer comprise titanium metal, due to titanium's high resistance to corrosion, and heat, to further reducing the deposition of compounds.

As per claim 3, Tao [JP 411025903] teaches at least a portion of the body being coated with metal. See Tao [JP 411025903] abstract, figs. 1-2. However, it does not explicitly state that the metal to be coated by titanium. Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, teaches that it was known to use titanium in construction materials, and the manufacturing of semiconductor equipment (pages 2-3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the body of the skimmer be coated with titanium metal in due to titanium's high resistance to corrosion and heat.

As per claim 4, Tao [JP 411025903] teaches the at least a portion of the body including one or more surfaces of the skimmer. See Tao [JP 411025903] abstract, figs. 1-2.

As per claim 5, Tao [JP 411025903] teaches the at least portion of the body at least partially surrounding and defining the orifice. See Tao [JP 411025903] abstract, figs. 1-2.

As per claim 6, Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, the titanium metal comprises an alloy of titanium. See Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, page 3.

As per claim 7, Tao [JP 411025903] teaches the metal combining with one or more of the metals in the group consisting of aluminum, vanadium, molybdenum, manganese, iron, platinum, tin, copper, niobium, zirconium, and chromium. See Tao [JP 411025903] abstract. Also see Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, which teaches an alloy of titanium being platinum. See Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, page 3.

As per claim 8, Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, teaches titanium metal comprising commercially pure titanium. See Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, page 3.

As per claim 9, Kobelco, "Titanium Characteristics," teaches the use of commercially pure titanium, and titanium metal comprising grade I, II, III, or IV titanium (page 3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use commercially pure titanium due to its tensile strength and its excellence in corrosion resistance and formability as taught in Kobelco, "Titanium Characteristics."

Claims 1-9,20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mordehai [6,703,610] in view of Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm. With respect to independent claim 1 and dependent claims 2-7, and 13, Mordehai [6,703,610] discloses skimmer in a mass spectrometer comprising a body (11), (figs. 1, 3a-4b) having an orifice through which

ions pass. However, Mordehai [6,703,610] does not explicitly state the body comprising titanium metal. Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm teaches that it was known to make electrodes out of titanium metal due to its high resistance to corrosion and heat (page 3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made have at least a portion of the body of the skimmer be comprised of titanium due to its' high resistance to corrosion, and heat, there by reducing the deposition of compounds in the mass spectrometer.

As per claim 2, Mordehai [6,703,610] teaches all aspects of the claim except for explicitly stating that the entire body of the skimmer be comprised of titanium. Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm teaches that it was known to make electrodes and reaction vessels out of titanium metal due to its high resistance to corrosion and heat (page 3). Therefore, it would have been obvious to on of ordinary skill in the art at the time the invention was made have the entire body of the skimmer be comprised of titanium due to titanium's high resistance to corrosion, and heat, to further reducing the deposition of compounds.

As per claim 3, Mordehai [6,703,610] teaches all aspects of the claim except for explicitly stating that at least a portion of the body being coated with titanium metal. Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm teaches that it was known to make electrodes and reaction vessels out of titanium metal due to its high resistance to corrosion and heat (page 3). Therefore, it would have been obvious to on of ordinary skill in the art at the time the invention was made have

the body being coated with titanium metal due to titanium's high resistance to corrosion, and heat, to further reducing the deposition of compounds.

As per claim 4, Mordehai [6,703,610] teaches at least a portion of the body including one or more surfaces of the skimmer. See Mordehai [6,703,610] figs. 1, 3a-3g.

As per claim 5, Mordehai [6,703,610] teaches the at least portion of the body partially surrounds and defines the orifice. See Mordehai [6,703,610] figs. 1, 3a-3g.

As per claim 6, Mordehai [6,703,610] teaches all aspects of the claim except for explicitly stating the titanium metal comprises an alloy of titanium. Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, the titanium metal comprising an alloy of titanium. See Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, page 3. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the titanium metal comprise an alloy of titanium due to excellent resistance to heat and corrosion.

As per claim 7, Also see Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, which teaches an alloy of titanium being an alloy of titanium and one or more of the metal in the group consisting of aluminum, vanadium, molybdenum, manganese, iron, platinum, tin, copper, niobium, zirconium, and chromium. See Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, page 3.

As per claims 8,9, Mordehai [6,703,610] fails to disclose the titanium metal comprising commercially pure titanium. Kobelco, "Titanium Characteristics," teaches the use of commercially pure titanium, and titanium metal comprising grade I, II, III, or IV titanium (page 3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use commercially pure titanium due to its tensile strength and its excellence in corrosion resistance and formability as taught in Kobelco, "Titanium Characteristics."

With respect to claim 20, Mordehai [6,703,610] teaches a source of ions for generating ions and a skimmer. See Mordehai [6,703,610] figs. 1,3a-4b.

With respect to dependent claims 21-25, it is the examiner's view that Mordehai [6,703,610] teaches the ions adiabatically expanding to form a supersonic free jet, and at least a portion of the skimmer being disposed in an area of the free jet expansion (Mordehai [6,703,610] figs. 1,3a-4b, and col. 4 lines 5-25); at least a portion of the skimmer being disposed in a zone of silence resulting from the free jet expansion area (Mordehai [6,703,610] figs. 1,3a-4b, and col. 4 lines 5-25); at least a portion of the skimmer be disposed outside of area of free expansion (Mordehai [6,703,610] figs. 1,3a-4b, and col. 4 lines 5-25); the source of ions comprising an orifice through which the ions emerge (fig. 1), and at least a portion of the skimmer is disposed such that the orifice is disposed opposing to the emerging ions (Mordehai [6,703,610] figs. 1,3a-4b, and col. 4 lines 5-25); and the ions generated by the source along an axis, and at least a portion of the skimmer being disposed at an angle from the axis (Mordehai [6,703,610] figs. 1,3a-4b, and col. 4 lines 5-25).

Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mordehai [6,703,610] in view of Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, further in view of Wang [6,797,948]. As per claims 11-12, Mordehai [6,703,610] in view of Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, teach all aspects of the claim except for stating the skimmer being configured such that an electrostatic potential can be applied, and that and an RF potential can be applied. Wang [6,797,948] teaches the skimmer being configured such that an electrostatic potential can be applied, and that and an RF potential can be applied. See Wang [6,797,948] figs. 1-4, col. 3 lines 1-10, and col. 8 lines 15-40. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the skimmer being configured such that an electrostatic potential can be applied, and that and an RF potential can be applied in order to aid in guiding the ions toward the skimmer and toward the mass analysis region and to aid in filtering ions.

Response to Arguments

Applicant's arguments filed 3/10/05 have been fully considered but they are not persuasive. Concerning the rejection of claims 8-9 and the combining of Mordehai [6,703,610] and Kobelco, "Titanium Characteristics," http://www.kobelco.co.jp/titan/e/feature.htm, it is the examiner's view that one would replace the titanium nitride skimmer in Mordehai [6,703,610] with a skimmer made of titanium metal, due to the increased resistance to corrosion and heat, a skimmer made of titanium metal would provide. In addition, it would have been obvious to one having

ordinary skill in the art at the time the invention was made to the skimmer be comprised of titanium metal, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

The remainder of applicant's arguments is considered moot in view of new grounds of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Nos. 5,793,039 to Oishi et al, 6,555,814 to Baykut et al, and 6,872,940 to Thakur are considered pertinent to that applicant's disclosure. Oishi [5,793,039] is considered pertinent due to its' discussion on a mass spectrometer, skimmer cone assembly, skimmer cone and its manufacturing method. Baykut [6,555,814] is considered pertinent due to its discussion on a method and device for controlling the number of ions in ion cyclotron resonance mass spectrometers. Thakur [6,872,940] is considered pertinent due to its discussion on focusing ions using gas dynamics.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Quash whose telephone number is (571)-272-2480. The examiner can normally be reached on Monday thru Friday 9 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571)-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A. Quash
5/31/05

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